

**HAMPDEN COUNTY
REGIONAL RETIREMENT SYSTEM**

Actuarial Valuation Report

January 1, 2004

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Report Summary:

Highlights

January 1, 2003

January 1, 2004

Contributions

Funding Schedule FY 2005	\$11,200,100	\$11,200,100
Funding Schedule FY 2006	11,584,100	13,004,631

Funded Ratios

GAS No. 25	62.3%	63.6%
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Participants

Actives	2,700	2,626
Inactives	440	447
Retirees and Beneficiaries	1,291	1,309
Disabilities	<u>122</u>	<u>118</u>
Total	4,553	4,500

Payroll

Payroll of Active Members	\$68,912,960	\$69,403,424
Average Payroll	25,523	26,429

Normal Cost

Employer	4,053,975	3,673,524
Employee	5,449,608	5,511,399
Administrative Expenses	<u>475,000</u>	<u>450,000</u>
Total	9,978,583	9,634,923

Actuarial Accrued Liabilities

Actives	142,209,551	143,710,452
Retirees, Beneficiaries, Disabilities and Inactives	<u>139,420,945</u>	<u>151,089,211</u>
Total	281,630,496	294,799,663

Actuarial Value of Assets

<u>175,587,680</u>	<u>187,556,932</u>
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Unfunded Actuarial Accrued Liabilities

\$106,042,815	\$107,242,731
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Introduction

This report presents the Hampden County actuarial valuation findings as of January 1, 2004, under the Commonwealth of Massachusetts Retirement System.

The actuarial valuation is based on:

- Provisions Chapter 32 of the Massachusetts General Laws, "M.G.L", as of January 1, 2004.
- Employee data provided by the Retirement Board
- Asset information reported to the Public Employee Retirement Administration Commission by the Hampden County Regional Retirement System
- Actuarial assumptions approved by the Retirement Board

The valuation and appropriation forecast are prepared in accordance with Chapter 32 of the M.G.L. as of January 1, 2004.

The valuation and forecast do not account for:

- Any subsequent changes in the law
- Chapter 32 of the M.G.L., Section 3(8)(c) transfers between systems
- State-mandated benefits
- Cost-of-living increases granted to retired members between 1982 and 1997. The cost of these benefits has been assumed by the State under Proposition Two and One-Half.

Actuarial Experience

In performing the actuarial valuation, various assumptions are made regarding such factors as mortality, retirement, disability, and withdrawal rates as well as both payroll, salary increases, and investment returns. A comparison of the current valuation and the prior valuation is made to determine how closely actual experience corresponded to anticipated occurrences. This analysis of the system provides insight into the overall quality of the actuarial assumptions and helps explain any change in the annual appropriation.

During the year, the total unfunded actuarial accrued liability increased by 1.13% to \$107,242,731, less than expected. The gain is the result of net favorable actuarial experience during the preceding year. There is a gain due to the lack of salary increases, offset by a small investment loss (i.e. the annual investment return was less than the 8.50% assumption).

Actuarial Costs and Liabilities:

Normal Costs

The normal cost is the sum of the individual normal costs determined for each member as if the assumptions underlying the cost determinations had been exactly realized. An individual normal cost represents that part of the cost of a member's future benefits which are assigned to the current year as if the costs are to remain level as a percentage of the member's pay. Benefits payable under all circumstances (i.e., retirement, death, disability, and terminations) are included in this calculation. Anticipated employee contributions to be made during the year are subtracted from the total normal cost to determine employer normal cost. The total normal cost is divided by total payroll to determine the normal cost as a percent of pay. The normal cost is shown in Table I.

Table I

	<u>January 1, 2003</u>	<u>January 1, 2004</u>
Superannuation	\$6,661,764	\$6,452,422
Death	498,335	480,206
Disability	1,382,078	1,319,756
Terminations	961,406	932,538
Administrative Expenses	<u>475,000</u>	<u>450,000</u>
Total Normal Cost	9,978,583	9,634,923
% of Pay	14.5%	13.9%
Employee Contributions	5,449,608	5,511,399
% of Pay	7.9%	7.9%
Employer Normal Cost	\$4,528,975	\$4,123,524
% of Pay	6.6%	5.9%

Present Value of Actuarial Accrued Liabilities

The actuarial accrued liabilities (AAL) represents today's value of all benefits earned by the actives and inactive. The AAL can be compared to the assets to determine the funded status of the Plan. The value of these earned benefits is shown in Table II below.

Table II

	<u>January 1, 2003</u>	<u>January 1, 2004</u>
Actives		
Superannuations	\$134,096,561	\$135,444,453
Death	3,473,259	\$3,568,494
Disability	7,122,133	\$7,322,087
Terminations	(2,482,402)	(\$2,624,582)
Retirees and Inactives		
Retirees	111,120,726	122,971,423
Disabled Retirees	26,577,530	25,950,221
Inactives	<u>1,722,689</u>	<u>2,167,567</u>
Total	\$281,630,496	\$294,799,663

Present Value of Future Benefits

The present value of future benefits represents today's value of all benefits earned by the inactivees as well as all benefits earned and expected to be earned in the coming years by the activees. The difference between the present value of future benefits and the present value of actuarial accrued liabilities is the value of benefits to be earned in the coming years. The value of the total expected benefits is shown in Table III.

Table III

	<u>January 1, 2003</u>	<u>January 1, 2004</u>
Activees		
Superannuation	\$191,731,918	\$193,720,745
Death	7,631,061	7,753,273
Disability	19,262,711	19,438,490
Terminations	6,171,118	6,158,147
Retirees and Inactivees		
Retirees	111,120,726	122,971,423
Disabled Retirees	26,577,530	25,950,221
Inactivees	<u>1,722,689</u>	<u>2,167,567</u>
Total	\$364,217,753	\$378,159,866

Funded Status and Appropriations:

Market Value of Plan Assets

The trust fund composition on a market value basis is shown in Table IV.

Table IV

	<u>January 1, 2003</u>	<u>January 1, 2004</u>
Cash equivalents	5,251,519	\$2,880,502
Short term investments	0	0
Fixed income securities	57,606,037	58,068,121
Equities	63,820,363	83,938,107
International	11,187,718	17,146,886
Real Estate	5,049,987	6,957,385
Venture Capital	0	0
Other	3,407,443	4,213,086
Accounts receivable	467,216	508,417
Accounts payable	0	0
Accrued income	<u>267,845</u>	<u>197,542</u>
Total Market Value	\$147,058,128	\$173,910,046
Total Actuarial Value	\$175,587,680	\$187,556,932

Actuarial Value of Assets

The actuarial value of assets is determined by projecting the market value of assets as of the beginning of the prior plan year with the assumed rate of return during that year (%) and accounting for deposits and disbursements with interest at the assumed rate of return. An adjustment is then applied to recognize the difference between the actual investment return and expected return over a five year period. This preliminary actuarial value is not allowed to differ from the market value of assets by more than 20%. The calculation of the actuarial value of assets as of January 1, 2004 is presented in Table V.

	<u>January 1, 2004</u>
(1) Market value at January 1, 2003	\$146,323,067
(2) 2003 Contributions	\$17,564,531
(3) 2003 Benefit Payments	(\$19,732,948)
(4) Net interest adjustment at 8.5% on (1), (2), and (3) to December 31, 2003	\$12,345,303
(5) Expected market value on January 1, 2004	\$156,499,953
(1) + (2) + (3) + (4)	
(6) Actual market value on January 1, 2004	\$173,910,046
(7) 2003 (Gain) / Loss	(\$17,410,093)
(8) 80% of 2003 (Gain) / Loss	(\$13,928,074)
(9) 2002 (Gain) / Loss	\$33,419,452
(10) 60% of 2002 (Gain) / Loss	\$20,051,671
(11) 2001 (Gain) / Loss	\$14,178,290
(12) 40% of 2001 (Gain) / Loss	\$5,671,316
(13) 2000 (Gain) / Loss	\$9,259,866
(14) 20% of 2000 (Gain) / Loss	\$1,851,973
(15) Actuarial value on January 1, 2004, (6) + (8) + (10) + (12) + (14)	\$187,556,932
(16) but not less than 80% nor greater than 120% of (6)	\$187,556,932
Ratio of actuarial value to market value	107.85%

Unfunded Actuarial Accrued Liabilities

Under the Entry Age Normal Actuarial Cost Method, the Actuarial Accrued Liability represents what the accumulated assets would have been as of the valuation date if:

- current plan provisions and assumptions had always been in effect,
- experience conformed exactly to assumptions, and
- the normal cost had been contributed each year since inception.

The actuarial value of the Fund's assets as of the end of the prior year are subtracted from the Actuarial Accrued Liability (AAL) to determine the Unfunded Actuarial Accrued Liability (UAAL) as of the valuation date. Over time, annual pension contributions will accumulate Plan assets equal to the AAL, and the UAAL will be eliminated. Thereafter, annual contributions equal to the normal cost will keep the Plan's assets and liabilities in balance. The UAAL is developed in Table VI.

Table VI

	<u>January 1, 2003</u>	<u>January 1, 2004</u>
Actuarial Accrued Liability	\$281,630,496	\$294,799,663
Actuarial Assets	<u>175,587,680</u>	<u>187,556,932</u>
Unfunded Actuarial Accrued Liability	\$106,042,815	\$107,242,731
Funded Status	62.3%	63.6%

Appropriations

The pension appropriation for the upcoming fiscal years have been calculated in accordance with the requirements set forth in Section 22D of Chapter 32 of the Massachusetts General Laws. These amounts were calculated to comply with the June 30, 2028, full funding mandate for all accrued liabilities. The pension appropriation is the sum of the:

- Employer normal cost,
- Increasing amortization of the unfunded actuarial accrued liability by June 30, 2024
\$ 106,791,829 over 20 years with 4.5 % increasing payments
- Level amortization of the Early Retirement Incentive unfunded liability by June 30, 2008
\$ 450,902 over 4 years
- Interest adjustment for payments deposited semiannually.

The pension appropriation is shown in Table VII.

Table VII

	<u>January 1, 2003</u>	<u>January 1, 2004</u>
Normal cost	\$4,528,975	\$4,123,524
Amortization payment of the accrued liability	6,916,077	7,453,253
Amortization payment of ERI	126,871	126,871
Total cost	\$11,571,923	\$11,703,648
% of Pay	16.8%	16.9%
Fiscal 2005 cost	\$11,200,100	\$11,200,100
Fiscal 2006 cost	\$11,584,100	\$13,004,631

Appropriation Forecast

The following exhibit forecasts employer and employee contributions over the next 32 years under the adopted funding schedule.

Note that the forecast is based upon an "open group" method. This method assumes that sufficient employees will be hired each year to keep the number constant. The total payroll of the system is expected to increase 4.5% per year. The employee contribution rate is expected to increase to 10.5% by 2028 as members contributing base percentages 5%, 7%, and 8% are replaced by new members, whose base contribution is 9%. Payments are assumed to be spread over the fiscal year.

The employer total cost is expected to increase during the next 20 years until the unfunded liabilities are completely paid off, at which time only the normal cost will remain. The total FY06 cost increase represents 17.9% of payroll, decreasing to 15.6% by the time the unfunded liabilities are fully paid off, leaving only a normal cost of 3.9% thereafter. The decrease in the cost as a percentage of payroll is a result of the increase in member deductions.

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Appropriation Forecast
(amounts in thousands)

Fiscal Year Ending	Employee Payroll*	Employee Contribution	Employer Normal Cost with Interest	Amortization Payments with Interest	Employer Total Cost with Interest	Employer Total Cost % of Payroll	Funded Ratio %**
2005	\$69,403	\$5,511	\$4,383	\$6,817	\$11,200	16.1	63.6
2006	72,527	5,840	4,494	8,510	13,005	17.9	64.9
2007	75,790	6,187	4,607	8,887	13,494	17.8	66.5
2008	79,201	6,554	4,721	9,281	14,002	17.7	68.2
2009	82,765	6,941	4,835	9,558	14,393	17.4	69.9
2010	86,489	7,349	4,950	9,988	14,938	17.3	71.6
2011	90,381	7,781	5,066	10,437	15,504	17.2	73.4
2012	94,448	8,236	5,183	10,907	16,090	17.0	75.1
2013	98,699	8,716	5,299	11,398	16,697	16.9	76.9
2014	103,140	9,223	5,416	11,911	17,326	16.8	78.6
2015	107,781	9,758	5,532	12,447	17,979	16.7	80.4
2016	112,632	10,323	5,648	13,007	18,654	16.6	82.2
2017	117,700	10,918	5,763	13,592	19,355	16.4	84.1
2018	122,996	11,546	5,876	14,204	20,080	16.3	85.9
2019	128,531	12,209	5,989	14,843	20,832	16.2	87.8
2020	134,315	12,908	6,099	15,511	21,611	16.1	89.7
2021	140,359	13,645	6,208	16,209	22,417	16.0	91.7
2022	146,676	14,422	6,314	16,938	23,252	15.9	93.7
2023	153,276	15,241	6,417	17,701	24,117	15.7	95.7
2024	160,173	16,105	6,516	18,497	25,013	15.6	97.8
2025	167,381	17,016	6,611	0	6,611	3.9	100.0
2026	174,913	17,977	6,702	0	6,702	3.8	100.0
2027	182,784	18,989	6,788	0	6,788	3.7	100.0
2028	191,010	20,056	6,867	0	6,867	3.6	100.0
2029	199,605	20,959	7,176	0	7,176	3.6	100.0
2030	208,587	21,902	7,499	0	7,499	3.6	100.0
2031	217,974	22,887	7,837	0	7,837	3.6	100.0
2032	227,783	23,917	8,189	0	8,189	3.6	100.0
2033	238,033	24,993	8,558	0	8,558	3.6	100.0
2034	248,744	26,118	8,943	0	8,943	3.6	100.0
2035	259,938	27,293	9,345	0	9,345	3.6	100.0
2036	271,635	28,522	9,766	0	9,766	3.6	100.0

* Calendar basis

** As of beginning of the Fiscal Year

GAS No. 25 and GAS No. 27

Effective for periods beginning after June 15, 1997, the Governmental Accounting Standards Board (GASB) requires the disclosure of pension related liabilities for public employer financial statements in accordance with Statements 25 and 27. These statements, which replace GASB Statement No. 5, must be adhered to by any public employee retirement system that follows Generally Accepted Accounting Principles (GAAP).

These disclosures are intended to establish a reporting framework that distinguishes between:

- current financial information about plan assets and financial activities,
- actuarially determined information from a long-term perspective,
- the funded status of the plan, and
- progress being made in accumulating sufficient assets to pay benefits when due.

Footnote disclosures required by GASB Statement No. 25 and 27 include a description of the plan, a summary of significant accounting policies, and information about contributions, legally required reserves, and investment concentrations. As a result of the oversight of the Public Employees Retirement Administration Commission (PERAC) and the conversion of unpaid contributions to pension related debt, the Net Pension Obligation (NPO) as required by Statement No. 27 will effectively always be equal to \$0. The required disclosure information is shown in Table VIII.

Table VIII

	<u>January 1, 2003</u>	<u>January 1, 2004</u>
(1) Actuarial Accrued Liability	\$281,630,496	\$294,799,663
(2) Actuarial Value of Assets	<u>175,587,680</u>	<u>187,556,932</u>
(3) Unfunded Actuarial Accrued Liability	106,042,815	107,242,731
(4) Funded Ratio (2)/(1)	62.3%	63.6%
(5) Covered Payroll	\$68,912,960	\$69,403,424
(6) UAAL as a percentage of payroll: (3)/(5)	153.9%	154.5%
(7) Annual Required Contribution (ARC)	\$10,669,244	\$11,200,100
(8) Net Pension Obligation	\$0	\$0

PERAC Annual Statement
APPENDIX PAGE 3
ACTUARIAL VALUATION AND ASSUMPTIONS

The most recent actuarial valuation of the System was prepared by Mellon Human Resources & Investor Solutions as of January 1, 2004.

The normal cost for employees on that date was:	\$5,511,399	7.9% of pay
The normal cost for the employer was:	3,673,524	5.3% of pay

The actuarial liability for active members was:	\$143,710,452
The actuarial liability for retired members was:	151,089,211
Total actuarial accrued liability:	294,799,663
System assets as of that date:	187,556,932
Unfunded actuarial accrued liability:	\$107,242,731

The ratio of system's assets to total actuarial liability was	63.6%
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The principal actuarial assumptions used in the valuation are as follows:

Investment Return:	8.5%
Rate of Salary Increase:	5.5%

SCHEDULE OF FUNDING PROGRESS

Actuarial Valuation Date	Actuarial Value of Assets	Actuarial Accrued Liability	Unfunded Actuarial Accrued Liability	Funded Ratio	Covered Payroll	UAAL as a percent of Covered Payroll
	(a)	(b)	(b-a)	(a/b)	(c)	(b-a)/c
01/01/04	\$187,556,932	\$294,799,663	\$107,242,731	63.6%	\$69,403,424	154.5%
01/01/03	175,587,680	281,630,496	106,042,815	62.3%	68,912,960	153.9%
01/01/02	168,722,805	268,661,316	99,938,511	62.8%	69,512,256	143.8%
01/01/01	175,985,360	241,080,485	65,095,125	73.0%	65,470,839	99.4%
01/01/00	173,574,907	226,808,635	53,233,728	76.5%	58,480,124	91.0%
01/01/99	153,484,932	207,750,431	54,265,499	73.9%	54,386,183	99.8%

Attach Copy of Current Approved Funding Schedule

EXHIBITS

Age/Service Distribution with Salary as of January 1, 2004

Attained Age	Average Salary	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40+	Total
< 20	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0
20-24	25	1	0	0	0	0	0	0	0	0	26
	20,979	34,851	0	0	0	0	0	0	0	0	21,512
25-29	77	19	0	0	0	0	0	0	0	0	96
	26,069	39,382	0	0	0	0	0	0	0	0	28,704
30-34	63	63	9	3	1	0	0	0	0	0	139
	26,779	40,944	41,412	19,728	5,217	0	0	0	0	0	33,840
35-39	143	63	25	24	4	1	0	0	0	0	260
	20,548	30,866	39,419	41,765	41,169	50,868	0	0	0	0	27,255
40-44	183	94	48	71	23	0	0	0	0	0	419
	17,780	24,135	34,520	37,463	41,353	0	0	0	0	0	25,753
45-49	190	133	74	48	37	28	0	0	0	0	510
	17,266	20,386	27,371	34,986	38,122	50,291	0	0	0	0	24,540
50-54	123	134	78	78	31	49	11	2	0	0	506
	18,934	22,993	21,400	28,418	44,024	50,743	52,652	53,440	0	0	27,338
55-59	62	86	60	87	31	23	23	7	0	0	379
	18,504	24,664	22,330	23,055	28,610	42,825	46,025	51,210	0	0	26,129
60-64	29	25	33	45	23	10	13	4	1	0	183
	14,643	23,007	28,162	25,258	30,011	28,808	41,786	59,758	64,021	0	26,723
65-69	12	11	9	13	11	6	2	1	2	0	67
	18,600	22,099	12,284	27,132	30,221	28,615	22,975	38,487	60,052	0	24,451
70+	8	4	0	8	7	7	3	4	0	0	41
	12,599	17,439	0	18,284	19,725	19,455	10,112	26,742	0	0	17,766
Total Employees	915	633	336	377	168	124	52	18	3	0	2,626
Average Salary	19,581	25,873	27,052	29,864	35,381	44,567	43,409	47,213	61,375	0	26,429

Retiree Distribution as of January 1, 2004

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	0	0	0	0	0	0
35-39	0	0	0	0	0	0
40-44	3	3	6	65,948	19,917	85,865
45-49	1	0	1	6,399	0	6,399
50-54	15	3	18	290,244	15,600	305,844
55-59	58	39	97	1,405,522	267,084	1,672,606
60-64	71	75	146	1,642,320	698,964	2,341,284
65-69	76	103	179	1,468,336	969,281	2,437,617
70-74	112	124	236	1,478,792	1,001,742	2,480,535
75-79	134	134	268	1,751,330	1,000,236	2,751,566
80-84	84	111	195	802,361	638,199	1,440,560
85-89	63	50	113	416,410	227,650	644,060
90-94	16	18	34	83,962	94,427	178,389
95-99	10	6	16	70,640	44,956	115,596
Total	643	666	1,309	9,482,263	4,978,056	14,460,320
Average (Age/Payment)	73.5	74	73.7	14,747	7,475	11,047
Frequency Percent	49.1	50.9	100	65.6	34.4	100

Disabled Retiree Distribution as of January 1, 2004

Attained Age	Number of Employees			Total Payments		
	Male	Female	Total	Male	Female	Total
< 20	0	0	0	0	0	0
20-24	0	0	0	0	0	0
25-29	0	0	0	0	0	0
30-34	2	0	2	52,949	0	52,949
35-39	2	0	2	56,871	0	56,871
40-44	4	0	4	101,984	0	101,984
45-49	8	1	9	219,022	7,308	226,330
50-54	15	1	16	421,124	37,526	458,650
55-59	20	2	22	459,015	10,095	469,110
60-64	9	1	10	228,385	27,315	255,699
65-69	19	1	20	440,785	24,208	464,993
70-74	15	0	15	295,324	0	295,324
75-79	11	2	13	225,631	11,617	237,248
80-84	2	1	3	33,435	22,628	56,062
85-89	1	1	2	16,129	14,603	30,732
90-94	0	0	0	0	0	0
95-99	0	0	0	0	0	0
Total	108	10	118	2,550,653	155,300	2,705,953
Average (Age/Payment)	61.8	66.5	62.2	23,617	15,530	22,932
Frequency Percent	91.5	8.5	100	94.3	5.7	100

EXHIBIT 4 - CASHFLOW FORECAST:

The following is a 30 year forecast of benefit payments net of state reimbursable COLA payments, Contribution Income and Investment Returns.

Plan Year Ending	Benefit Payments	Employee Contributions	Employer Contributions	Investment Returns	Net change in plan assets
2004	\$17,838	\$5,511	\$11,200	\$15,413	\$14,286
2005	18,674	5,840	13,005	16,636	16,807
2006	19,594	6,187	13,494	18,043	18,130
2007	20,527	6,554	14,002	19,563	19,592
2008	21,523	6,941	14,393	21,203	21,014
2009	22,620	7,349	14,938	22,963	22,630
2010	23,741	7,781	15,504	24,861	24,405
2011	25,034	8,236	16,090	26,904	26,196
2012	26,422	8,716	16,697	29,097	28,088
2013	27,975	9,223	17,326	31,444	30,018
2014	29,612	9,758	17,979	33,954	32,079
2015	31,439	10,323	18,654	36,633	34,171
2016	33,333	10,918	19,355	39,488	36,428
2017	35,323	11,546	20,080	42,533	38,836
2018	37,285	12,209	20,832	45,785	41,541
2019	39,272	12,908	21,611	49,268	44,515
2020	41,246	13,645	22,417	53,007	47,823
2021	43,205	14,422	23,252	57,029	51,498
2022	45,129	15,241	24,117	61,368	55,597
2023	47,004	16,105	25,013	66,059	60,173
2024	48,797	17,016	6,611	70,743	45,573
2025	50,479	17,977	6,702	74,577	48,777
2026	52,075	18,989	6,788	78,689	52,391
2027	53,555	20,056	6,867	83,115	56,483
2028	54,921	20,959	7,176	87,882	61,096
2029	55,998	21,902	7,499	93,054	66,457
2030	56,887	22,887	7,837	98,691	72,528
2031	57,577	23,917	8,189	104,853	79,382
2032	57,961	24,993	8,558	111,611	87,201
2033	59,906	26,118	8,943	118,971	94,126

amounts in thousands

EXHIBIT 5 – SUMMARY OF PLAN PROVISIONS:

This summary is prepared in accordance with Chapter 32 as of January 1, 2004, and does not take into account any subsequent changes.

1. Administration

Each of the 107 contributory retirement systems for public employees for the Commonwealth of Massachusetts are guided by the applicable provisions of Chapter 32 of the Massachusetts General Laws and other applicable statutes. Although these boards operate semi-independently, there is a uniform set of rules governing benefits, eligibility, contributions, financing, and accounting.

2. Participation

Participation is mandatory for all full-time employees whose employment commences prior to age 65. Eligibility with respect to part-time, professional, temporary, or intermittent employment is governed by the local board. Membership is optional for certain elected officials, State officials appointed by the Governor, and certain hospital interns.

There are four classes of membership as follows:

- (i) Group 1: Most general employees in State and local government
- (ii) Group 2: Certain specified hazardous duty positions
- (iii) Group 3: State police officers and inspectors
- (iv) Group 4: Local police officers, firefighters, and designated employees of the municipal light department.

For members in more than one group, participation will be proportional.

3. **Salary**

Salary is defined as gross regular compensation. Salary does not include bonuses, overtime, severance pay, unused sick leave credit, or other similar compensation.

4. **Member Contributions**

Member contributions vary depending upon date hired as follows:

<u>Date of Hire</u>	<u>Member Contribution Rate</u>
Prior to 1975	5.0% of Salary
1975 to 1983	7.0% of Salary
1984 to 1996	8.0% of Salary
1996 and Later plus	9.0% of Salary
1979 and Later	2.0% of Salary in excess of \$30,000

5. **Average Salary**

Average salary is used to determine a participant's benefit. It is defined as the average salary during the three consecutive-year period that produces the highest average. (Alternatively, if a greater amount results, it is the average rate of salary earned during the period or periods, whether or not consecutive, that constitutes the last three years preceding retirement.)

6. **Creditable Service**

In general, creditable service is awarded during the period in which a member contributes to the retirement system.

7. Service Retirement

a. Eligibility:

For an employee to be eligible for service retirement (also referred to as superannuation), one of the following conditions must be met:

- (i) completion of 20 years of service
- (ii) for an employee hired prior to January 1, 1978, attainment of age 55 as an active member
- (iii) for an employee hired on or after January 1, 1978, attainment of age 55 as an active member and completion of ten years of service
- (iv) if an employee is a State Police officer (Group 3), attainment of age 50

b. Benefit Amount:

The retirement allowance is determined as a product of the participant's Benefit Rate times Average Salary times Creditable Service, where Benefit Rate is determined from the following table:

<u>Age at Retirement</u>	<u>Percentage of Average Salary</u>		
	<u>Group 1</u>	<u>Group 2</u>	<u>Group 4</u>
65 or Over	.025	.025	.025
64	.024	.025	.025
63	.023	.025	.025
62	.022	.025	.025
61	.021	.025	.025
60	.020	.025	.025
59	.019	.024	.025
58	.018	.023	.025
57	.017	.022	.025
56	.016	.021	.025
55	.015	.020	.025
54	.014	.014	.024
53	.013	.013	.023
52	.012	.012	.022
51	.011	.011	.021
50	.010	.010	.020
49	.009	.009	.019
48	.008	.008	.018
47	.007	.007	.017
46	.006	.006	.016
45	.005	.005	.015
44	.004	.004	.004
43	.003	.003	.003
42	.002	.002	.002
41	.001	.001	.001

For Group 3 (State Police), the benefit is 50% of the participant's final year's rate of regular salary, plus an additional 1% for each year of service in excess of 20 years. In addition, for veterans (all groups) there is an additional benefit of \$15 per year for each year of service, up to a maximum of 20 years of service.

8. Deferred Vested Retirement

a. Eligibility:

A participant who has completed ten or more years of creditable service is eligible for a deferred vested retirement benefit. If termination is involuntary, the participant is vested after six years.

b. Benefit Amount:

The participant's accrued benefit is payable commencing at age 55, or may be deferred until later at the employee's option.

c. Refund of Contributions:

In lieu of the deferred pension benefit, a member may elect to receive a refund of their accumulated contributions. Members with ten or more years of service are entitled to 100% of the credited interest on their contributions. Members with five to ten years of service are entitled to 50% of the credited interest on their contributions. No credited interest is provided for members with less than five years of service.

9. Accidental Disability

a. Eligibility:

Participants are eligible for an accidental disability benefit, regardless of service or age, if they become permanently and totally incapacitated for further duty as a result of personal injury sustained while in the performance of duties.

b. Benefit Amount:

The accidental disability amount is 72% of annual salary plus \$450 per year for each child plus an additional annuity based upon accumulated Member Contributions with credited interest.

10. Ordinary Disability**a. Eligibility:**

An ordinary disability occurs when a member becomes permanently and totally disabled due to sickness or injury that is not job related. In order to be eligible for an ordinary disability benefit, a member must have ten years of service (and be less than age 55).

b. Benefit Amount:

The ordinary disability amount is equal to the accrued retirement benefit as if the member were age 55. If the member was a veteran, the benefit is 50% of the member's final rate of Salary during the preceding 12 months, plus an annuity based upon accumulated Member Contributions plus credited interest. If the participant is over age 55, he will receive not less than the superannuation allowance to which he is entitled.

11. Survivor Benefits**a. Occupational Death:**

The survivors of a member who dies due to an occupational injury will be entitled to a lump sum return of contributions plus a pension benefit equal to 72% of the participant's annual Salary.

b. Non-Occupational Death:

Upon the death of a member other than due to an occupational injury, the designated beneficiary will be entitled to a retirement benefit as if Option C had been elected with a minimum of \$250 per month to the surviving spouse, plus \$120 for the first child, plus \$90 for each additional child. If no beneficiary is designated and if the employee worked two years, and is married at least one year, the spouse may elect benefits. If there is no designated beneficiary or surviving spouse, then member contributions are returned. If there are dependent children but no surviving spouse, they may elect minimum survivor benefits of \$250 per month plus \$120 for the first child and \$90 for each additional child.

c. Refund of Contributions:

Upon the death of a member not entitled to survivor benefits, the beneficiary is entitled to a refund of all member contributions with interest.

12. Cost-of-Living Increases

In accordance with the adoption of Chapter 17 of the Acts of 1997, the granting of a cost-of-living adjustment will be determined by an annual vote by the Retirement Board. The amount of increase will be based upon the Consumer Price Index, limited to a maximum of 3.0%, beginning on July 1. All retirees, disabled retirees, and beneficiaries who have been receiving benefits payments for at least one year as of July 1 are eligible for the adjustment. The maximum amount of pension benefit subject to a COLA is \$12,000. All COLAs granted to members after 1981 and prior to July 1, 1998 are deemed to be an obligation of the State and are not the liability of the Retirement System.

13. Postretirement Death Benefits

Any benefits following the death of a member after retirement are based upon the form of benefit the participant elected at the time of retirement. There are three available forms as follows:

- (i) Option A – Life annuity
- (ii) Option B – Life annuity with death benefit equal to excess of member contributions plus credited interest to retirement over annuity benefit paid to member
- (iii) Option C – Life annuity with 66-2/3% of benefit continued after death of member to designated joint annuitant

EXHIBIT 6 – ACTUARIAL METHODS AND ASSUMPTIONS:

The actuarial cost method, factors, and assumptions used in determining cost estimates are presented below.

1. Member Data

The member data used in the determination of cost estimates consist of pertinent information with respect to the active, inactive, retired, and disabled members of the employer as supplied by the employer to the actuary.

2. Valuation Date

January 1, 2004.

3. Actuarial Cost Method

The costs of the Plan have been determined in accordance with the individual entry age normal actuarial cost method.

4. Rate of Investment Return

It is assumed that the assets of the fund will accumulate at a compound annual rate of 8.5% per annum.

5. Salary Scale

It is assumed that salaries including longevity will increase at a rate of 5.5% per year.

6. Cost-of-Living Increases

Cost-of-living increases have been assumed to be 3.0% of the lesser of the pension amount and \$12,000 per year.

7. Value of Investments

Assets held by the fund are valued at market value as reported by the Public Employees'

Retirement Administration Commission (PERAC). The actuarial value of assets is determined using a five-year smoothing of unrealized gains and losses.

8. Annual Rate of Withdrawal Prior to Retirement

Based on an analysis of experience, the assumed annual rates of withdrawal may best be illustrated by the following rates at the following ages:

<u>Service</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
0	0.1500	0.0150
10	0.0540	0.0150
20	0.0200	0.0000
30	0.0000	0.0000

9. Annual Rate of Mortality

It is assumed that both preretirement and postretirement mortality are represented by the RP-2000 Mortality Table for males and females. Mortality for disabled members is represented by the RP-2000 Mortality Table set forward two years for all disabled members.

10. Service Retirement

Based on an analysis of experience, the assumed annual retirement rates are illustrated at the following ages:

<u>Age</u>	<u>Male General Employees</u>	<u>Female General Employees</u>	<u>Male and Female Police and Fire Employees</u>
50	0.0100	0.0150	0.02000
51	0.0100	0.0150	0.02000
52	0.0100	0.0200	0.02000
53	0.0100	0.0250	0.05000
54	0.0200	0.0250	0.07500
55	0.0200	0.0550	0.15000
56	0.0250	0.0650	0.10000
57	0.0250	0.0650	0.10000
58	0.0500	0.0650	0.10000
59	0.0650	0.0650	0.15000
60	0.1200	0.0500	0.20000
61	0.2000	0.1300	0.20000
62	0.3000	0.1500	0.25000
63	0.2500	0.1250	0.25000
64	0.2200	0.1800	0.30000
65	0.4000	0.1500	1.00000
66	0.2500	0.2000	1.00000
67	0.2500	0.2000	1.00000
68	0.3000	0.2500	1.00000
69	0.3000	0.2000	1.00000
70	1.0000	1.0000	1.00000

11. Annual Rate of Disability Prior to Retirement

Based on an analysis of experience, the assumed annual rates of disability may best be illustrated by the following probabilities at the following ages:

<u>Attained Age</u>	<u>General Employees</u>	<u>Police and Fire Employees</u>
20	0.0001	0.0001
30	0.0003	0.0003
40	0.0010	0.0030
50	0.0019	0.0125

In addition, it is assumed for the general employees that 45% of all disabilities are ordinary (55% are service connected). For police and fire employees, 10% of all disabilities are assumed to be ordinary (90% are service connected).

12. Family Composition

It is assumed that 80% of all members will be survived by a spouse and that females (males) are three years younger (older) than members.

13. Administrative Expenses

The normal cost is increased by an amount equal to the anticipated administrative expenses for the upcoming fiscal year. The amount for fiscal year 2004 is \$450,000 and is anticipated to increase at 4.5% per year.

EXHIBIT 7 – GLOSSARY OF TERMS:

This glossary summarizes the technical terms contained in this report.

1. **Actuarial Accrued Liability**

That portion of the Actuarial Present Value of plan benefits that is not provided for by future employer Normal Costs or employee contributions.

2. **Actuarial Assumptions**

Assumptions as to the occurrence of future events affecting the Retirement System such as:

- Rates of investment returns
- Increases in a member's salary
- Inflation
- The probability of mortality, turnover, disablement
- Retirement at each age and other relevant items

3. **Actuarial Cost Method**

A procedure for allocating the Actuarial Present Value of pension plan benefits between Normal Cost and Actuarial Accrued Liability.

4. **Actuarial Present Value**

The single sum amount required at the valuation date that is required to provide for anticipated future events based upon the terms of the plan and the Actuarial Assumptions.

5. **Forecast**

A projection of future benefit payments or contribution requirements based upon the terms of the plan, the current asset amounts, the Actuarial Assumptions, and additional assumptions as to the replacement of terminating employees with new employees.

6. Normal Cost

That portion of the Actuarial Present Value of future benefits that is assigned to the current year.

7. Unfunded Actuarial Accrued Liability

That portion of the Actuarial Accrued Liability that is not provided for by current actuarial value of assets.

8. Valuation Method

The method used to divide the cost of future benefits among the Actuarial Accrued Liability, the current year's Normal Costs, and future years' Normal Costs. The resulting current funding requirement is then determined as the current year's Normal Cost plus the payment necessary to amortize the Unfunded Actuarial Liability.

9. Vested Liability

That portion of the Actuarial Present Value of Accrued Benefits that a member would be entitled to if the member terminated employment with the employer as of the valuation date.

CERTIFICATION:

This report fairly represents the actuarial position of the Hampden County Regional Retirement System contributing as of January 1, 2004, in accordance with generally accepted actuarial principles applied consistently with the preceding valuation. In our opinion, the actuarial assumptions used to compute actuarial accrued liability and normal cost is reasonably related to plan experience and to reasonable expectations, and represents our best estimate of anticipated plan experience.

Mellon Human Resources and Investor Solutions

Daniel W. Sherman, ASA, MAAA
Enrolled Actuary No. 99-4086

May 2004